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Bibliotherapy on coping with illness improves health literacy but not heart-related anxiety of patients in cardiological rehabilitation

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Introduction:

Information of patients about their illness is necessary for patient empowerment and coping with illness. This can be done by written material, i.e. bibliotherapy [1-6]. Scientific data suggest that bibliotherapy can help patients to better understand their illness, improve their health behaviour, and reduce anxiety [2, 3, 7]. The objective of the present study is to investigate in a randomized controlled trial the effects of bibliotherapy on illness-related knowledge, i.e. health literacy, and on heart-related anxiety in cardiology patients.

Method:

The study was done in an inpatient cardiology rehabilitation unit, where patients were treated for three weeks on average either in the aftermath of some acute problem, like myocardial infarction, or a chronic state of illness, which needed a special case work up, like hypertension. After giving their informed consent, a convenience sample of 130 patients was randomly assigned either to a control or intervention group. Patients in the intervention group were given brochures on “coping with illness” (15 pages) and “hypochondriac anxiety” (10 pages) in a weekly interval. The brochures were developed in a very sophisticated stepwise process, starting with (a) a literature review, (b) writing the text in reference to published recommendations of behavioural medicine on coping with illness, (c) review of the text by therapists and patients, (d) ensuring an attractive printing design, (e) guaranteeing a reading ease factor of 42 and 43 in reference to the „reading ease formula“ [5], similar to a simple newspaper, (f) ensuring good scores on understandability according the rating scheme of Tausch [6]. There was no further discussion of the brochures with the treating cardiologists during the inpatient stay.

After admission and before discharge, all patients filled in the 17-item self-rating Heart Anxiety Questionnaire HAF-17 [8], covering fear of symptoms, heart-related self-observation, and avoidance of activities. Before discharge all patients got a questionnaire on illness-related knowledge containing 10 multiple choice questions with five alternative answers, one of which is correct. Questions asked specifically for the content of the brochures.

The average age of patients was 53 years ($SD=7.10$). 59% were male, 73% had less than 12 years of school education, 25.9% a high school degree (12 years), 80% were employed full-time, 15% part-time, 4.9% were out of work, one person was retired. 34% suffered from hypertension (ICD-10: I10.- I15), 41% from ischemic heart disorder (ICD-10: I20 - I25), 17% from other forms of heart disorders (ICD-10: I30 - I52) and 2% had had a heart transplantation (ICD-10: Z94).

Results:

Patients who had read the brochures had a significantly better illness-related knowledge at discharge than the controls (Table 1).

[insert table 1 about here]

All patients reported a moderate level of fear of symptoms, heart-related self-observation and avoidance of activities (Table 1), comparable to other cardiology samples [8]. There were initially no significant differences between the two groups, or between patients with different cardiological illnesses, except for a trend that patients with heart-transplantation reported higher heart-related anxiety (HAF $M=2.0$, $SD=0.42$) than patients with hypertension, ischemic or other

heart disorders (HAF $M=1.29 - 1.53$, $SD=0.48 - 0.64$).

All dimensions of heart-related anxiety decreased significantly during the course of the inpatient stay, especially avoidance of activities (Table 1) in both groups with no significant differences between groups.

Conclusions:

Bibliotherapy can increase health literacy even when patients are treated as inpatients in a rehabilitation unit, where patient education is a major part of routine treatment [9]. This increased health literacy does not correspond with a further reduction in heart-related anxieties. Intervention and control group similarly show a marked reduction in anxiety during the general rehabilitation, so that there could be a ceiling effect. Also, a lesser amount of information or specific information, like cognitive reframing of threatening symptoms, may be sufficient to change anxiety [1]. Furthermore, the question is whether a discussion of the provided information with the cardiologist would have yielded different results [2,4,10]. Finally, other factors may play a role like severity or type of the cardiac illness, psychological mechanisms (e.g. illness denial), or psychiatric disorders.

Conflict of Interest: None

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Table 1. Heart Anxiety according to Heart Anxiety Questionnaire HAF-17 (scale 0 = symptoms occur never - 4 = symptoms are always present) and Illness-related Knowledge Questionnaire (0-10 points, 10 = all answers correct) in the beginning and end of rehabilitation treatment in cardiology patients receiving and patients not receiving bibliotherapy brochures (N = 130)

								Pairwise comparison of control and intervention group (adjusted with Bonferroni)
Heart Anxiety Questionnaire HAF-17 Dimensions	Cron- bachs Alpha	All (N=130)		Control group (N =57)		Intervention group (N = 73)		Sign. 2- sided
		M	SD	M	SD	M	SD	
<i>Fear of symptoms</i>								
Pre	.75	1.48	0.69	1.48	0.64	1.49	0.73	.852
Post	.76	1.37	0.58	1.37	0.59	1.35	0.58	.761
Pre-post Sign. 2-sided		.004		.109		.018		
<i>Avoidance of activities</i>								
Pre	.84	1.32	0.88	1.41	0.92	1.22	0.86	.139
Post	.88	1.03	0.81	1.07	0.86	0.98	0.79	.393
Pre-post Sign. 2-sided		.000		.000		.000		
<i>Heart-related self- observation</i>								
Pre	.68	1.29	0.69	1.36	0.70	1.25	0.69	.409
Post	.68	1.20	0.62	1.23	0.62	1.17	0.63	.496
Pre-post Sign. 2-sided		.009		.015		.124		
<i>HAF-17 all items</i>								
Pre	.82	1.38	0.56	1.42	0.50	1.35	0.59	.425
Post	.83	1.24	0.48	1.25	0.49	1.21	0.49	.428
Pre-post Sign. 2-sided		.000		.000		.001		
Illness-related Knowledge Questionnaire				M	SD	M	SD	Sign. 1- sided
<i>Hypochondriasis</i>								
Brochure title: “Fear of illness”				6.42	2.72	7.98	2.12	.010
(N Intervention = 33 N Control = 43)								

<i>Coping with illness</i> (Brochure title: “Being threatened by illness”) (N Intervention = 26 N Control = 28)	6.14	1.51	2.58	2.14	.007
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